AKTIVITAS KATALIS DOPING $Mg_{1-x}Zn_xF_2$ DALAM REAKSI SINTESIS METIL ESTER

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Abstrak

Pada penelitian ini telah dilakukan sintesis katalis $Mg_{1-x}Zn_xF_2$ (x= 0,025; 0,05; 0,10 dan 0,15) dengan metode sol-gel. Katalis dikarakterisasi dengan difraksi sinar-X (XRD) dan adsorpsi piridin-FTIR Aktivitas katalitik katalis diuji pada reaksi minyak RPO (*Refined palm* Oil) dan metanol. Hasil XRD menunjukkan bahwa semua katalis $Mg_{1-x}Zn_xF_2$ memiliki kecocokan struktur dengan *database* MgF_2 tetragonal. Semua katalis $Mg_{1-x}Zn_xF_2$ memiliki sisi asam Lewis dan asam Brønsted pada spektra FT-IR. Aktivitas tertinggi diperoleh pada katalis $Mg_{0,95}Zn_{0,05}F_2$ dengan konversi asam palmitat dan asam stearat masing-masing sebesar 3,6% dan 37,06% dan konversi total sebesar 40,66%.

Kata kunci: *Katalis, Doping, $Mg_{1-x}Zn_xF_2$*

ACTIVITY OF DOPED CATALYST $Mg_{1-x}Zn_xF_2$ CATALYST ON METHYL ESTER REACTION SYNTHESIS

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Abstract

$Mg_{1-x}Zn_xF_2$ (x= 0,025; 0,05; 0,10 dan 0,15) catalysts were synthesized by a sol-gel method. The catalysts were characterized by X-ray diffraction and FT-IR pyridine adsorption method. The catalytic activity of the samples were tested by *Refined Palm Oil* (RPO) and methanol reaction. The result of XRD pattern showed that the structure $Mg_{1-x}Zn_xF_2$ catalysts match with MgF_2 tetragonal database. $Mg_{1-x}Zn_xF_2$ catalysts have a Lewis and Brønsted acid from FT-IR spectra. The best results of catalytic testing were obtained by $Mg_{0,95}Zn_{0,05}F_2$ catalyst with conversion of palmitat acid and stearat acid 3,6% and 37,06% respectively and total conversion is 40,66%.

Keywords: *Catalyst*, *Doping*, *$Mg_{1-x}Zn_xF_2$*